

CLAIMS

WHAT IS CLAIMED IS:

1. A raised microstructure for use in a silicon based device, the raised microstructure comprising:
  - 5 a generally planar thin-film;
  - a sidewall supporting the film;
  - wherein the sidewall has at least one rib formed therein.
2. The raised microstructure of claim 1 wherein the sidewall is corrugated.
3. The raised microstructure of claim 1 wherein the rib has a generally arcuate cross  
10 section.
4. The raised microstructure of claim 1 wherein the rib has a generally triangular cross section.
5. The raised microstructure of claim 1 wherein the rib has a generally rectangular cross section.
- 15 6. The raised microstructure of claim 1 wherein the thin-film comprises one plate of a silicon based capacitive transducer.
7. The raised microstructure of claim 1 wherein the thin-film comprises a rigid backplate of a silicon based microphone.
8. A silicon based electret microphone having a backplate comprising:
  - 20 a generally planar thin-film;
  - a sidewall supporting the film;
  - wherein the sidewall has at least one rib formed therein.
9. The microphone of claim 8 wherein the sidewall is corrugated.
10. The microphone of claim 8 wherein the rib has a generally arcuate cross section.
- 25 11. The microphone of claim 1 wherein the rib has a generally triangular cross section.
12. The microphone of claim 1 wherein the rib has a generally rectangular cross section.
13. The microphone of claim 8 wherein the sidewall includes a plurality of ribs.
14. The microphone of claim 13, wherein the ribs are equally spaced about the sidewall.
- 30 15. A raised microstructure for use in a silicon based device, the raised microstructure comprising:

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a generally planar element with a first thickness and a periphery;

a sidewall with a second thickness;

said sidewall supporting said planar element at said periphery above a substrate at a distance;

5            wherein said sidewall has a plurality of ribs formed therein.

16.        The raised microstructure of claim 15 wherein said first thickness is small compared to the lateral extent of the said planar element.

17.        The raised microstructure of claim 15 wherein said second thickness is approximately equal to the said first thickness.

10        18.        The raised microstructure of claim 15 wherein said distance is large compared to said second thickness.

19.        The raised microstructure of claim 15 wherein the ribs follow a periodic path of the periphery, inwards and outwards with respect to the centroid of the planar element.

20.        The raised microstructure of claim 19 wherein the path is arcuate.

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